

SWP # 24. AA-0002

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. 5-00-052

WASTE DISCHARGE REQUIREMENTS  
FOR  
COUNTY OF MERCED,  
CITY OF ATWATER,  
CITY OF DOS PALOS,  
CITY OF GUSTINE,  
CITY OF LIVINGSTON,  
CITY OF LOS BANOS,  
AND CITY OF MERCED  
FOR  
OPERATION OF  
BILLY WRIGHT SOLID WASTE LANDFILL  
MERCED COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The Billy Wright Municipal Solid Waste Landfill is jointly owned by the County of Merced and the cities of Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced (hereafter jointly referred to as Discharger). The Merced County Public Works Department operates the Billy Wright municipal solid waste landfill which is approximately 8 miles west of the City of Los Banos and 1 mile south of Highway 152, in Sections 27, T10S, R9E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order.
2. The 89-acre waste management facility consists of one inactive and one active unlined waste management unit covering 3 and 30 acres, respectively. An additional 87.5 acres will be added to the waste management facility in a permit revision in the year 2000. The additional acreage will not involve lateral expansion of the waste management unit. The existing and additional acreage totaling 176.5 acres are shown in Attachment B, which is incorporated herein and made part of this Order. The facility is comprised of Assessor's Parcel Numbers (APN) 78-200-75, 78-200-01, 78-200-38, 78-200-03 and 78-200-76.
3. On 22 June 1990, the Board adopted Order No. 90-185 which prescribes waste discharge requirements for the existing waste management unit. The facility is classified as a Class III landfill which accepts municipal solid waste in accordance with Title 27, California Code of Regulations, §20005, et seq. (Title 27).

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4. On 17 September 1993, the Board adopted Order No. 93-200, amending Order No. 90-185 and implementing State Water Resources Control Board Resolution No. 93-62, Policy for Regulation of Discharges of Municipal Solid Waste.
5. This Order updates the waste discharge requirements for the facility in conformance with the California Water Code and Title 27, including the revisions and policies adopted thereunder, and removes the facility from Attachment 1 of Order No. 93-200 and for the construction and operation of the facility.
6. The landfill receives approximately 250 cubic yards per day of municipal solid waste with an anticipated remaining capacity of 1.2 million cubic yards and an anticipated life of 8 years.

#### SITE DESCRIPTION

7. The facility site is between two northeast to east-west trending ephemeral drainages within dissected uplands along the western margin of the San Joaquin Valley. Elevations at the site range from approximately 270 to 340 feet above mean sea level (MSL).
8. The site is underlain by marine sedimentary rocks, which include mudstone with lesser fine-grained sandstone, concretionary and fossiliferous sandstone, and gypsum of the Late Cretaceous Panoche and/or Moreno Formations.
9. The hydraulic conductivities of the native soils underlying the waste management unit range between  $1.5 \times 10^{-4}$  and  $2.67 \times 10^{-5}$  cm/sec.
10. The waste management facility is not within a fault hazard zone. The closest Holocene fault zone is the Ortigalita Fault Zone approximately 10 miles to the southwest. The maximum probable earthquake for a 100-year event along this fault zone is estimated to be approximately 4.25 on the Richter scale.
11. Land within 1,000 feet of the facility is used for agriculture and grazing, and is zoned for agriculture and highway interchange.
12. The facility receives an average of 8.48 inches of precipitation per year as measured at the Los Banos Station from 1873 to 1979. The mean evaporation for this facility is 87.8 inches per year as measured at the Los Banos field Station from 1949 to 1978.

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13. The 100-year, 24-hour precipitation event for the facility is estimated to be 2.54 inches, based on Department of Water Resources' bulletin entitled *Rainfall Depth-Duration-Frequency for California*, revised November 1982, updated August 1986.
14. The waste management facility is not within a 100-year floodplain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Community-Panel Number 06047C0825E.
15. There are no municipal, domestic, industrial, or agricultural groundwater supply wells within a 1-mile radius of the site. No surface springs or other sources of groundwater supply have been observed.

### SURFACE AND GROUND WATER CONDITIONS

16. The Board adopted the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan), which designates beneficial uses and contains water quality objectives for all waters of the Basin. This order implements the Basin Plan.
17. Surface drainage is to an unnamed intermittent stream that flows into a small evaporation basin approximately one mile northeast of the site in the Los Banos Hydrologic Area (541.20) of the San Joaquin Basin. The basin is prevented from drainage to the San Joaquin Valley by canal embankment structures.
18. The surface water contains approximately 8,500 mg/l TDS, 30 mg/l nitrate (as nitrogen), 0.4 mg/l selenium, and 4.0 mg/l boron. These concentrations exceed primary or secondary drinking water standards. Preliminary information indicates that the landfill is not significantly affecting surface water quality.
19. The designated beneficial uses of surface waters on the valley floor, as specified in the Basin Plan, are agricultural supply, industrial service and process supply, contact and noncontact water recreation, warm fresh water habitat, preservation of rare, threatened and endangered species, and groundwater recharge.
20. Irrigation drainage from crop production is probably a major source of soluble constituents in surface and groundwater.
21. The first encountered groundwater is approximately 8 to 44 feet below the native ground surface. Groundwater elevations range from 257 feet MSL to 294 feet MSL.

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22. Monitoring data indicates that the groundwater is unconfined to semiconfined. The depth to groundwater fluctuates seasonally as much as three feet in the unconfined wells and less than one foot in the semi-confined wells.
23. The direction of groundwater flow is toward the northeast. The average groundwater gradient is approximately 0.025 feet per foot. The average groundwater velocity is 5 feet per year. The direction of groundwater flow appears to be a function of secondary permeability, controlled primarily by fractures and the occurrence of thin gypsum beds.
24. Monitoring data indicates that background groundwater quality is extremely poor, with total dissolved solids (TDS) greater than 20,000 mg/l, selenium greater than 2 mg/l, and nitrate (as nitrogen) greater than 50 mg/l. Groundwater quality downgradient of the landfill has significantly lower concentrations of TDS and selenium.
25. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal, agricultural, and industrial supply.
26. State Water Resources Control Board Order No. 97-03 DWQ (General Permit No. CAS000001), amended 17 April 1997, specifies waste discharge requirements for discharges of storm water associated with industrial activities, excluding construction activities, and requiring submission of a Notice Of Intent by industries to be covered under the permit. Waste disposal at landfills, including inert disposal facilities, is considered an industrial activity requiring submittal of a Notice Of Intent for coverage under the general permit if storm water is to be discharged off site. The Discharger has submitted a Notice Of Intent and received a permit. Storm water runoff will be diverted to an offsite drainage trench adjacent to Billy Wright Road and monitored in accordance with the provisions of the permit.

**WASTE AND SITE CLASSIFICATION**

27. The Discharger proposes to discharge municipal solid wastes, which are defined in §20164 of Title 27.
28. The site characteristics where the waste management unit is located (see Finding No. 9) do not meet the siting criteria for a new Class III landfill contained in §20260(a) and (b)(1) of Title 27. As such, the site is not suitable for operating new waste management units or lateral expansions of existing waste management units for the discharge and containment of Class III wastes as described in Finding No. 27 without the construction of additional waste

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containment features in accordance with §20260(b)(2) of Title 27 and State Water Resources Control Board Resolution No. 93-62.

### **SURFACE WATER MONITORING**

29. Surface water detection monitoring consists of three monitoring points (S-1, S-2, and S-3) along the unnamed intermittent stream.

### **GROUNDWATER MONITORING**

30. The Discharger is required to monitor the groundwater and vadose zone in accordance with Title 27.
31. The groundwater detection monitoring network consists of background well MW-1 and downgradient wells MW-2, MW-3, and MW-4.
32. Vadose zone monitoring is performed by collecting samples from five landfill gas monitoring probes (GW-1, GW-2, and GW-6 through GW-8) installed along the west, south, and southeast boundaries of the active waste management unit. Several volatile organic compounds (VOCs) have recently been detected in gas well samples at trace concentrations, including: benzene, tetrachloroethylene, trichloroethylene, 1,1-dichloroethane, dichlorofluoromethane, and 1,2-dichlorotetrafluoroethane. However, none of these constituents have been detected in recent groundwater monitoring samples.
33. The Discharger's existing detection monitoring program for groundwater for this waste management facility satisfies the requirements contained in Title 27.

### **GROUNDWATER DEGRADATION**

34. Volatile organic compounds (VOCs) have been detected in downgradient monitoring wells below water quality criteria on a sporadic basis, including: 1,1-dichloroethane, dichlorodifluoromethane, and dichloromethane in MW-3; and chloroethane, 1,1-dichloroethane, dichlorodifluoromethane, and trichloroethylene in MW-4. Recent sampling events have not confirmed the presence of these constituents in groundwater samples. In addition, several inorganic constituents of concern have been sporadically detected at concentrations above tolerance limits, including: nitrate in MW-1; chloride and sulfate in

MW-3; and nitrate in MW-4. Concentrations of these constituents have been below tolerance limits in recent monitoring sampling events.

### LANDFILL CONSTRUCTION

35. The Discharger does not intend to construct a lateral expansion of the landfill at this time.
36. This order prohibits lateral expansion of the waste management unit. Any future construction will require the submission of a report of waste discharge and the issuance of revised waste discharge requirements.

### CEQA CONSIDERATIONS

37. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code §21000, et seq., and the CEQA guidelines, in accordance with Title 14, CCR, §15301.

### OTHER CONSIDERATIONS

38. On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated regulations (Title 40, Code of Federal Regulations, Parts 257 and 258, "federal municipal solid waste [MSW] regulations" or "Subtitle D") that apply, in California, to dischargers who own or operate Class II or Class III landfill units at which municipal solid waste is discharged. The majority of the federal MSW regulations became effective on the "Federal Deadline", which was on 9 October 1993. The USEPA has deemed the State of California to be an approved state, meaning that compliance with the applicable state regulations constitutes compliance with the corresponding portions of the federal Subtitle D regulations. These requirements implement the appropriate state regulations in lieu of Subtitle D.
39. These requirements implement the prescriptive standard and performance goals of Title 27, California Code of Regulations, §20005 et seq. (Title 27).
40. These requirements implement the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*.

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41. These requirements implement State Water Resources Control Board Resolution No. 93-62, Policy for Regulation of Discharges of Municipal Solid Waste, which implement the federal Subtitle D regulations.
42. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
43. The Board has notified the Discharger and interested agencies and persons of its intention to update the waste discharge requirements for this facility.
44. In a public hearing, the Board heard and considered all comments pertaining to this facility and discharge.

IT IS HEREBY ORDERED that Order No. 90-185 is rescinded, and Attachment 1 of Order No. 93-200 is amended to delete the Billy Wright Landfill, which is on line No. 68, and that the County of Merced and the cities of Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced, their agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

**A. PROHIBITIONS**

1. The discharge of 'hazardous waste' or 'designated waste' at this facility is prohibited. For the purposes of this Order, the term 'hazardous waste' is as defined in Title 23 California Code of Regulations, Section 2510 et seq., and 'designated waste' is as defined in Title 27.
2. The discharge of wastes outside of an existing waste management unit or portions of an existing waste management unit specifically designed for their containment is prohibited.
3. The discharge of solid waste, liquid waste, leachate, or waste constituents to surface waters, ponded water, surface water drainage courses, or groundwater is prohibited.
4. The discharge of liquid or semi-solid waste (i.e., waste containing less than 50 percent solids), except dewatered sewage or water treatment sludge above a composite liner as provided in §20220(c) of Title 27, is prohibited.

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5. The discharge of solid waste containing free liquid or moisture in excess of the waste's moisture holding capacity is prohibited.
6. The discharge of waste within 100 feet of surface waters is prohibited.
7. The discharge shall not cause the pollution or degradation of groundwater via the release of waste constituents in either liquid or gaseous phase.
8. The discharge of wastes shall not cause the pollution or degradation of any water supply.
9. The discharge of wastes which have the potential to reduce or impair the integrity of containment structures or which, if commingled with other wastes in the waste management unit, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products, which, in turn:
  - a. require a higher level of containment than provided by the unit; or
  - b. are 'restricted hazardous wastes'; or
  - c. impair the integrity of containment structures;is prohibited.
10. The discharge shall not cause any increase in the concentration of waste constituents in soil or other geologic materials outside of the waste management unit if such waste constituents could migrate to waters of the State and cause a condition of degradation, pollution, or nuisance.
11. The discharge of waste to a waste management unit after it is closed is prohibited.

**B. DISCHARGE SPECIFICATIONS**

1. Wastes shall only be discharged to that portion of an existing waste management unit that was permitted and/or received wastes prior to the Federal Deadline of 9 October 1993.



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2. A minimum separation of 5 feet shall be maintained between the base of the wastes and the highest anticipated elevation of underlying groundwater, including the capillary fringe.
3. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control, construction, and, after closure, to the minimum amount necessary to irrigate cover vegetation or for other uses approved by the Executive Officer.
4. Collected landfill leachate shall be discharged to an appropriate waste management unit in accordance with Title 27 and in a manner consistent with the disposal of designated waste, or discharged on-site to a waste management unit that has a composite liner and a leachate collection and removal system.
5. Collected gas condensate from landfill gas control systems shall be discharged to an appropriate waste management unit in accordance with Title 27 and in a manner consistent with the disposal of designated waste, or discharged on-site to a waste management unit that has a composite liner and a leachate collection and removal system.
6. Neither the treatment nor the discharge of wastes shall cause a pollution or nuisance as defined by the California Water Code, §13050.
7. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.

**C. FACILITY SPECIFICATIONS**

1. Waste management units and containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping as a result of a 100-year, 24-hour precipitation event.
2. Precipitation and drainage control systems shall be designed, constructed, and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under the 100-year, 24-hour precipitation conditions.

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3. Cover materials shall be graded to divert precipitation from the waste management unit, to prevent the ponding of surface water over wastes, and to resist erosion as a result of a 100-year, 24-hour precipitation event.
4. Waste management units or portions of waste management units shall be designed, constructed, and operated in compliance with precipitation and flood conditions contained in the Standard Provisions and Reporting Requirements referenced in Provision F.5 below.
5. All drainage control systems shall be designed and constructed to prevent the ponding of water above wastes.
6. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes.
7. Areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion.
8. An earthen cover shall be maintained over all but the active disposal area of the waste management unit. This area shall be properly graded and drained to prevent ponding and infiltration. The cover over the waste management unit shall be approved by the California Integrated Waste Management Board in accordance with §20680 of Title 27. Any alternative daily cover material shall be approved by Board staff to ensure that it will be protective of water quality.
9. Annually, no later than **30 September** and **within 7 days** following a major storm event, all precipitation and drainage control systems shall be inspected. By **31 October** of each year, or **within 30 days** of a major storm event, any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the facility and to prevent surface drainage from contacting or percolating through wastes.
10. By **15 November** of each year, or **within 45 days** of a major storm event, the Discharger shall submit a report to the Board describing the results of the inspection(s) and the measures taken to maintain the precipitation and drainage control systems.
11. The Discharger shall immediately notify the Board of any flooding, unpermitted offsite discharge, equipment failure, slope failure, or other change in site conditions

that could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

12. The Discharger shall submit a *Storm Water Pollution and Prevention Plan* prior to the discharge of wastes to a newly constructed waste management unit or to an expansion of an existing waste management unit. The Plan shall include a report demonstrating adequate design, construction, and operation of a facility liquid management system for protection from storm events, including precipitation and drainage controls, in accordance with Facility Specifications C.1 through C.8.

#### D. CLOSURE SPECIFICATION

1. Partial or final closure of all or a portion of an existing classified waste management unit shall be in compliance with the applicable provisions of Title 27. Classified waste management units or portions of waste management units shall be closed in accordance with the approved closure and post-closure maintenance plan and closure waste discharge requirements adopted by the Board. The Discharger shall notify the Board in writing of the waste management unit(s) or portion of waste management unit(s) to be closed at least **180 days** prior to the intended beginning of any partial or final closure activities. Closure shall not proceed in the absence of closure waste discharge requirements.

#### E. DETECTION MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection monitoring provisions Title 27 for groundwater, surface water, and the unsaturated zone, and in accordance with Monitoring and Reporting Program No. 5-00-052.
2. The Water Quality Protection Standard, as defined in §20390 of Title 27, shall consist of constituents of concern, their concentration limits, the point of compliance, and all water quality monitoring points. Constituents of concern shall include all waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the landfill. Concentration limits shall consist of the background concentrations of each constituent of concern or concentrations greater than background, pursuant to §20400 of Title 27.

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3. The Discharger shall comply with the Water Quality Protection Standard which is specified in Monitoring and Reporting Program No. 5-00-052 and the Standard Provisions and Reporting Requirements, dated August 1997, which are attached to and made part of this order.
4. Organic compounds that are not naturally occurring have a background value of zero. The Water Quality Protection Standard for volatile organic compounds shall be taken as the detection limit of the analytical method used (i.e., 8260 and 8270). Evidence of exceeding the standard occurs when the constituent is detected by the appropriate method.
5. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to Monitoring and Reporting Program No. 5-00-052.
6. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program No. 5-00-052 and §20415(e) of Title 27.
7. Methane and other landfill gases shall be adequately vented, removed from the waste management unit, or otherwise controlled to prevent the danger of explosion, adverse health effects, nuisance conditions, or the impairment of the beneficial uses of surface water or groundwater due to migration through the vadose (unsaturated) zone.

**F. PROVISIONS**

1. The Discharger shall maintain legible records of the volume and type of each waste discharged at each waste management unit or portion of a waste management unit, and the manner and location of the discharge. Such records shall be maintained at the facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the Board and of the State Water Resources Control Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be properly stored for future reference.
2. The Discharger shall maintain a copy of this order at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel upon request.

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3. The Discharger shall comply with all applicable provisions of Title 27 that are not specifically referred to in this Order.
4. The Discharger shall comply with Monitoring and Reporting Program No. 5-00-052, which is incorporated into and made part of this Order. This compliance includes, but is not limited to, maintenance of waste containment facilities, precipitation and drainage controls, the groundwater monitoring system, leachate from the waste management unit(s), the vadose zone and surface water monitoring systems, throughout the active life of the waste management unit and the post-closure maintenance period.
5. The Discharger shall comply with the applicable portions of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Discharges Regulated by Title 27 and/or Part 258 (27 CCR §20005 et. seq. and 40 CFR 258 et. seq.), dated August 1997, which are hereby incorporated into this Order.
6. A violation of any of the applicable portions of the Standard Provisions and Reporting Requirements or the Monitoring and Reporting Program is a violation of these waste discharge requirements.
7. The Discharger or persons employed by the Discharger shall comply with all notice and reporting requirements of the State Department of Water Resources with regard to the construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this Order as required by §13750 through §13755 of the California Water Code.
8. The Discharger shall maintain waste containment facilities and precipitation and drainage controls, and shall continue to monitor groundwater in accordance with Monitoring and Reporting Program No. 5-00-052 throughout the active life of the waste management unit and the post-closure maintenance period.
9. The Discharger shall have the continuing responsibility to assure the protection of the beneficial uses of ground and surface waters from gases and leachate generated by discharged waste during the active life, closure and post-closure maintenance period of the waste management unit(s) and during the subsequent use of the property for other purposes.
10. In the event of any change in control or ownership of the land or waste discharge facilities described herein, the Discharger shall notify the succeeding owner or

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operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Board, and a statement. The statement shall comply with the signatory requirements contained in Reporting Requirements No. 5 of the Standard Provisions and Reporting Requirements and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved by the Board.

11. The Discharger shall notify the Board in writing of any proposed change in ownership or responsibility for construction or operation of the waste management unit. The Discharger shall also notify the Board of a material change in the character, location or volume of the waste discharge and of any proposed expansions or closure plans. This notification shall be given **90 days** prior to the effective date of the change and shall be accompanied by an amended Report of Waste Discharge and any technical documents that are needed to demonstrate continued compliance with these waste discharge requirements.
12. The Discharger shall, by **30 April of each year**, submit for approval by the Executive Officer, plans with detailed cost estimates and a demonstration of assurances of financial responsibility for initiating and completing corrective action for all known and reasonably foreseeable releases from the waste management unit. The Discharger shall provide the assurances of financial responsibility to the California Integrated Waste Management Board as required by Title 27 CCR, Division 2, Subdivision 1, Chapter 6. The assurances of financial responsibility shall provide that funds for corrective action shall be available to the Regional Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Discharger shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation.
13. The Discharger shall, by **30 April of each year**, submit for approval by the Executive Officer, a demonstration of assurances of financial responsibility to ensure closure and post-closure maintenance of each waste management unit in accordance with its approved closure and post-closure maintenance plans. The

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Discharger shall provide the assurances of financial responsibility to the California Integrated Waste Management Board as required by Title 27 CCR, Division 2, Subdivision 1, Chapter 6. The assurances of financial responsibility shall provide that funds for closure and post-closure maintenance with respect to water quality shall be available to the Regional Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Discharger shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation.

14. If a single mechanism of financial assurance is used for both corrective action and closure and post-closure maintenance, the financial assurance must be sufficient for both requirements
15. The Board will review this Order periodically and will revise these waste discharge requirements when necessary.

I, GARY M. CARLTON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 17 March 2000.

  
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GARY M. CARLTON, Executive Officer

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 5-00-052  
FOR

COUNTY OF MERCED  
CITY OF ATWATER,  
CITY OF DOS PALOS,  
CITY OF GUSTINE,  
CITY OF LIVINSTON  
CITY OF LOS BANOS  
AND CITY OF MERCED

FOR  
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Compliance with this Monitoring and Reporting Program, with Title 27, California Code of Regulations, Section 20005, et seq. (hereafter Title 27), and with the Standard Provisions and Reporting Requirements, dated August 1997, is ordered by Waste Discharge Requirements Order No. 5-00-052.

**Failure to comply with this Program, or with the Standard Provisions and Reporting Requirements, constitutes noncompliance with the Waste Discharge Requirements and with the California Water Code, which can result in the imposition of civil monetary liability.**

**A. REQUIRED MONITORING REPORTS**

<u>Report</u>	<u>Due</u>
1. Groundwater Monitoring (Section D.1)	See Table I
2. Annual Monitoring Summary Report (Standard Provisions and Reporting Requirements)	Annually
3. Unsaturated Zone Monitoring (Section D.2)	See Table II
4. Surface Water Monitoring (Section D.3)	See Table III
5. Facility Monitoring (Section D.4)	As necessary
6. Response to a Release (Standard Provisions and Reporting Requirements)	As necessary



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**B. REPORTING**

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in the Standard Provisions and Reporting Requirements. Reports that do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. Data shall also be submitted in a digital database format acceptable to the Executive Officer. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. A short discussion of the monitoring results, including notations of any water quality violations, shall precede the tabular summaries.

Field and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, semiannual, and annual monitoring reports shall be submitted to Board staff in accordance with the following schedule for the calendar period in which samples were taken or observations made. The results of any monitoring done more frequently than required at the locations specified herein shall be reported to Board staff.

<u>Sampling Frequency</u>	<u>Reporting Frequency</u>	<u>Reporting Periods End</u>	<u>Report Date Due</u>
Monthly	Quarterly	Last Day of Month	by Quarterly Schedule
Quarterly	Quarterly	31 March	30 April
		30 June	31 July
		30 September	31 October
		31 December	31 January
Semi-Annually	Semi-Annually	30 June	31 July
		31 December	31 January
Annually	Annually	31 December	31 January

The annual report to be submitted to Board staff shall contain both tabular and graphical summaries of the monitoring data obtained during the previous twelve months, so as to show historical trends at each well. The report shall include a discussion of compliance with the waste discharge requirements and the water quality protection standard.

## **C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD**

### **1. Water Quality Protection Standard Report**

For each waste management unit, the water quality protection standard consists of a list of constituents of concern and monitoring parameters, concentration limits for each constituent of concern, the point of compliance, and all monitoring points.

If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the water quality protection standard.

### **2. Constituents of Concern**

The constituents of concern are the waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the waste management unit. The constituents of concern for all waste management units at the facility are those listed in Table V. The Discharger shall monitor all constituents of concern in Table V every five years, or more frequently as required in accordance with a Corrective Action Program.

#### **a. Monitoring Parameters**

Monitoring parameters are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a waste management unit. The monitoring parameters for all waste management units are those listed in Tables I through IV for the specified monitored medium.

### **3. Concentration Limits**

The concentration limits for each constituent of concern are as follows:

- a. for naturally occurring constituents of concern, the concentration limit shall be the calculated statistical concentration limit.
- b. for anthropogenic (not naturally occurring) constituents, which have no natural and, therefore, no background values, the concentration limit (water quality protection standard) shall be the detection limit of the analytical method(s) used.

The Discharger shall use the statistical method approved by the Executive Officer and the groundwater quality data obtained from the detection monitoring program to revise the concentration limits annually. The Discharger shall submit the revised

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concentration limits to the Executive Officer for review and approval in the annual monitoring report.

**4. Point of Compliance**

The point of compliance for each waste management unit is the vertical surface located at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit.

**a. Monitoring Points**

All downgradient wells established for groundwater monitoring shall constitute the monitoring points for the groundwater quality protection standard. All approved monitoring wells, unsaturated zone monitoring devices, leachate, and surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Tables I through III.

**5. Compliance Period**

The compliance period for each waste management unit shall be the number of years equal to the active life of the waste management unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program.

**D. MONITORING**

The Discharger shall comply with the detection monitoring provisions of Title 27 for groundwater, surface water, and the unsaturated zone, in accordance with Detection Monitoring Specification E.1 and E.3 of waste discharger requirements Order No. 5-00-052. All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan, which includes quality assurance/quality control standards, that is acceptable to the Executive Officer.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those which cannot be quantified and/or specifically identified. Metals shall be analyzed in accordance with the methods listed in Table V.

The Discharger may use alternative analytical test methods, including new EPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

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**1. Groundwater**

The Discharger shall install and operate a groundwater detection monitoring system that complies with the applicable provisions of §20415 and §20420 of Title 27 in accordance with a Detection Monitoring Plan approved by the Executive Officer. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

The Discharger shall determine groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results quarterly, including the times of highest and lowest elevations of the water levels in the wells.

Groundwater samples shall be collected from the point of compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table I. All monitoring parameters shall be graphed so as to show historical trends at each well. The monitoring parameters shall also be evaluated annually with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram or a Piper graph. Samples for the constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods listed in Table VI every five years.

**2. Unsaturated Zone Monitoring**

Unsaturated zone samples shall be collected from the monitoring devices and background monitoring devices of the approved unsaturated zone monitoring system. Samples shall be collected and analyzed for the listed constituents in accordance with the methods and frequency specified in Table II. All monitoring parameters shall be graphed so as to show historical trends at each monitoring point. Samples for the constituents of concern specified in Table II shall be collected and analyzed in accordance with the methods listed in Table V every five years.

Unsaturated zone monitoring reports shall be included with the corresponding semi-annual groundwater monitoring and shall include an evaluation of potential impacts of the facility on the unsaturated zone and compliance with the water quality protection standard.

**3. Surface Water Monitoring**

The Discharger shall install and operate a surface water detection monitoring system where appropriate that complies with the applicable provisions of §20415 and §20420 of Title 27 and has been approved by the Executive Officer.

For all monitoring points and background monitoring points assigned to surface water detection monitoring, samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table III. All surface water monitoring samples shall be collected and analyzed for the constituents of concern specified in Table III every five years. All monitoring parameters shall be graphed so as to show historical trends at each sample location.

**4. Facility Monitoring**

**a. Facility Inspection**

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system, groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations defined in the Standard Provisions and Reporting Requirements (Definition 24). Any necessary construction, maintenance, or repairs shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit an annual report describing the results of the inspection and the repair measures implemented.

**b. Storm Events**

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage within 7 days following *major storm events*. Necessary repairs shall be completed within 30 days of the inspection. The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs.

The Discharger shall implement the above monitoring program on the effective date of this Program.

Ordered by:

  
GARY M. CARLTON, Executive Officer

17 March 2000

(Date)

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**TABLE I**  
**GROUNDWATER DETECTION MONITORING PROGRAM**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Groundwater Elevation	Ft. & hundredths, M.S.L.	Quarterly
Temperature	°C	Semi-annual
Specific Conductance	µmhos/cm	Semi-annual
pH	pH units	Semi-annual
Turbidity	Turbidity units	Semi-annual
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L	Semi-annual
Chloride	mg/L	Semi-annual
Carbonate	mg/L	Semi-annual
Bicarbonate	mg/L	Semi-annual
Nitrate - Nitrogen	mg/L	Semi-annual
Sulfate	mg/L	Semi-annual
Calcium	mg/L	Semi-annual
Magnesium	mg/L	Semi-annual
Potassium	mg/L	Semi-annual
Sodium	mg/L	Semi-annual
Volatile Organic Compounds (USEPA Method 8260, see Table IV)	µg/L	Semi-annual
<b>Constituents of Concern (see Table V)</b>		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8150)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141)	µg/L	5 years

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TABLE II  
UNSATURATED ZONE DETECTION MONITORING PROGRAM

SOIL-PORE GAS

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Monitoring Parameters</b>		
Volatile Organic Compounds (USEPA Method TO-14)	$\mu\text{g}/\text{cm}^3$	Semi-annual
Methane	%	Quarterly

**TABLE III**  
**SURFACE WATER DETECTION MONITORING PROGRAM**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Temperature	°C	Semi-annual
Specific Conductance	µmhos/cm	Semi-annual
pH	pH units	Semi-annual
Turbidity	Turbidity units	Semi-annual
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L	Semi-annual
Carbonate	mg/L	Semi-annual
Bicarbonate	mg/L	Semi-annual
Chloride	mg/L	Semi-annual
Nitrate - Nitrogen	mg/L	Semi-annual
Sulfate	mg/L	Semi-annual
Calcium	mg/L	Semi-annual
Magnesium	mg/L	Semi-annual
Potassium	mg/L	Semi-annual
Sodium	mg/L	Semi-annual
Volatile Organic Compounds (USEPA Method 8260, see Table IV)	µg/L	Semi-annual
<b>Constituents of Concern (see Table V)</b>		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8150)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141)	µg/L	5 years



TABLE IV  
MONITORING PARAMETERS FOR DETECTION MONITORING

**Surrogates for Metallic Constituents:**

pH  
Total Dissolved Solids  
Specific Conductivity  
Chloride  
Sulfate  
Nitrate nitrogen

**Constituents included in VOC:**

**USEPA Method 8260**

Acetone  
Acrylonitrile  
Benzene  
Bromochloromethane  
Bromodichloromethane  
Bromoform (Tribromomethane)  
Carbon disulfide  
Carbon tetrachloride  
Chlorobenzene  
Chloroethane (Ethyl chloride)  
Chloroform (Trichloromethane)  
Dibromochloromethane (Chlorodibromomethane)  
1,2-Dibromo-3-chloropropane (DBCP)  
1,2-Dibromoethane (Ethylene dibromide; EDB)  
o-Dichlorobenzene (1,2-Dichlorobenzene)  
p-Dichlorobenzene (1,4-Dichlorobenzene)  
trans-1,4-Dichloro-2-butene  
1,1-Dichloroethane (Ethylidene chloride)  
1,2-Dichloroethane (Ethylene dichloride)  
1,1-Dichloroethylene (1,1-Dichloroethene; Vinylidene chloride)  
cis-1,2-Dichloroethylene (cis-1,2-Dichloroethene)  
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)  
1,2-Dichloropropane (Propylene dichloride)  
cis-1,3-Dichloropropene  
trans-1,3-Dichloropropene  
Ethylbenzene  
2-Hexanone (Methyl butyl ketone)  
Methyl bromide (Bromomethane)  
Methyl chloride (Chloromethane)  
Methylene bromide (Dibromomethane)  
Methylene chloride (Dichloromethane)  
Methyl ethyl ketone (MEK: 2-Butanone)

TABLE IV  
MONITORING PARAMETERS FOR DETECTION MONITORING  
Continued

Methyl iodide (Iodomethane)  
4-Methyl-2-pentanone (Methyl isobutylketone)  
Styrene  
1,1,1,2-Tetrachloroethane  
1,1,2,2-Tetrachloroethane  
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)  
Toluene  
1,1,1-Trichloroethane (Methylchloroform)  
1,1,2-Trichloroethane  
Trichloroethylene (Trichloroethene)  
Trichlorofluoromethane (CFC- 11)  
1,2,3-Trichloropropane  
Vinyl acetate  
Vinyl chloride  
Xylenes

TABLE V  
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

<u>Inorganics (dissolved):</u>	<u>USEPA Method</u>
Aluminum	6010
Antimony	6010
Barium	6010
Beryllium	6010
Cadmium	6010
Chromium	6010
Cobalt	6010
Copper	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	7061
Lead	7421
Mercury	7470
Nickel	7520
Selenium	7741
Thallium	7841
Cyanide	9010
Sulfide	9030

**Volatile Organic Compounds:**

USEPA Method 8260

Acetone  
Acetonitrile (Methyl cyanide)  
Acrolein  
Acrylonitrile  
Allyl chloride (3-Chloropropene)  
Benzene  
Bis(2-ethylhexyl) phthalate  
Bromochloromethane (Chlorobromomethane)  
Bromodichloromethane (Dibromochloromethane)  
Bromoform (Tribromomethane)  
Carbon disulfide  
Carbon tetrachloride  
Chlorobenzene  
Chloroethane (Ethyl chloride)  
Chloroform (Trichloromethane)  
Chloroprene

TABLE V  
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS  
Continued

Dibromochloromethane (Chlorodibromomethane)  
1,2-Dibromo-3-chloropropane (DBCP)  
1,2-Dibromoethane (Ethylene dibromide; EDB)  
o-Dichlorobenzene (1,2-Dichlorobenzene)  
m-Dichlorobenzene (1,3-Dichlorobenzene)  
p-Dichlorobenzene (1,4-Dichlorobenzene)  
trans- 1,4-Dichloro-2-butene  
Dichlorodifluoromethane (CFC 12)  
1,1 -Dichloroethane (Ethylidene chloride)  
1,2-Dichloroethane (Ethylene dichloride)  
1,1 -Dichloroethylene (1, 1-Dichloroethene; Vinylidene chloride)  
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)  
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene)  
1,2-Dichloropropane (Propylene dichloride)  
1,3-Dichloropropane (Trimethylene dichloride)  
2,2-Dichloropropane (Isopropylidene chloride)  
1,1 -Dichloropropene  
cis- 1,3-Dichloropropene  
trans- 1,3-Dichloropropene  
Ethylbenzene  
Hexachlorobutadiene  
2-Hexanone (Methyl butyl ketone)  
Isobutyl alcohol  
Isodrin  
Methacrylonitrile  
Methyl bromide (Bromomethane)  
Methyl chloride (Chloromethane)  
Methyl ethyl ketone (MEK; 2-Butanone)  
Methyl iodide (Iodomethane)  
Methyl methacrylate  
4-Methyl-2-pentanone (Methyl isobutyl ketone)  
Methylene bromide (Dibromomethane)  
Methylene chloride (Dichloromethane)  
Naphthalene  
Propionitrile (Ethyl cyanide)  
Styrene  
1,1,1,2-Tetrachloroethane  
1,1,2,2-Tetrachloroethane  
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)  
Toluene 1,2,4-Trichlorobenzene  
1,1,1 -Trichloroethane, Methylchloroform  
1,1,2-Trichloroethane

TABLE V  
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS  
Continued

Trichloroethylene (Trichloroethene; TCE)  
Trichlorofluoromethane (CFC- 11)  
1,2,3-Trichloropropane  
Vinyl acetate  
Vinyl chloride (Chloroethene)  
Xylene (total)

Semi-Volatile Organic Compounds:

USEPA Method 8270 - base, neutral, & acid extractables

Acenaphthene  
Acenaphthylene  
Acetophenone  
2-Acetylaminofluorene (2-AAF)  
Aldrin  
4-Aminobiphenyl  
Anthracene  
Benzo[a]anthracene (Benzanthracene)  
Benzo[b]fluoranthene  
Benzo[k]fluoranthene  
Benzo[g,h,i]perylene  
Benzo[a]pyrene  
Benzyl alcohol  
alpha-BHC  
beta-BHC  
delta-BHC  
gamma-BHC (Lindane)  
Bis(2-chloroethoxy)methane  
Bis(2-chloroethyl) ether (Dichloroethyl ether)  
Bis(2-chloro-1-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)  
4-Bromophenyl phenyl ether  
Butyl benzyl phthalate (Benzyl butyl phthalate)  
Chlordane  
p-Chloroaniline  
Chlorobenzilate  
p-Chloro-m-cresol (4-Chloro-3-methylphenol)  
2-Chloronaphthalene  
2-Chlorophenol  
4-Chlorophenyl phenyl ether  
Chrysene  
o-Cresol (2-methylphenol)  
m-Cresol (3-methylphenol)

TABLE V  
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS  
Continued

p-Cresol (4-methylphenol)  
4,4'-DDD  
4,4'-DDE  
4,4'-DDT  
Diallate  
Dibenz[a,h]anthracene  
Dibenzofuran  
Di-n-butyl phthalate  
o-Dichlorobenzene (1,2-Dichlorobenzene)  
m-Dichlorobenzene (1,3-Dichlorobenzene)  
p-Dichlorobenzene (1,4-Dichlorobenzene)  
3,3'-Dichlorobenzidine  
2,4-Dichlorophenol  
2,6-Dichlorophenol  
Dieldrin  
Diethyl phthalate  
p-(Dimethylamino)azobenzene  
7,12-Dimethylbenz[a]anthracene  
3,3'-Dimethylbenzidine  
2,4-Dimethylphenol (m-Xylenol)  
Dimethyl phthalate  
m-Dinitrobenzene  
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)  
2,4-Dinitrophenol  
2,4-Dinitrotoluene  
2,6-Dinitrotoluene  
Di-n-octyl phthalate  
Diphenylamine  
Endosulfan I  
Endosulfan II  
Endosulfan sulfate  
Endrin  
Endrin aldehyde  
Ethyl methacrylate  
Ethyl methanesulfonate  
Famphur  
Fluoranthene  
Fluorene  
Heptachlor  
Heptachlor epoxide  
Hexachlorobenzene  
Hexachlorobutadiene

TABLE V  
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS  
Continued

Hexachlorocyclopentadiene  
Hexachloroethane  
Hexachloropropene  
Indeno(1,2,3-c,d)pyrene  
Isophorone  
Isosafrole  
Kepone  
Methapyrilene  
Methoxychlor  
3-Methylcholanthrene  
Methyl methanesulfonate  
2-Methylnaphthalene  
Naphthalene  
1,4-Naphthoquinone  
1-Naphthylamine  
2-Naphthylamine  
o-Nitroaniline (2-Nitroaniline)  
m-Nitroaniline (3-Nitroaniline)  
p-Nitroaniline (4-Nitroaniline)  
Nitrobenzene  
o-Nitrophenol (2-Nitrophenol)  
p-Nitrophenol (4-Nitrophenol)  
N-Nitrosodi-n-butylamine (Di-n-butyl nitrosamine)  
N-Nitrosodiethylamine (Diethyl nitrosamine)  
N-Nitrosodimethylamine (Dimethyl nitrosamine)  
N-Nitrosodiphenylamine (Diphenyl nitrosamine)  
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propyl nitrosamine)  
N-Nitrosomethylethylamine (Methylethyl nitrosamine)  
N-Nitrosopiperidine  
N-Nitrosopyrrolidine  
5-Nitro-o-toluidine  
Pentachlorobenzene  
Pentachloronitrobenzene (PCNB)  
Pentachlorophenol  
Phenacetin  
Phenanthrene  
Phenol  
p-Phenylenediamine  
Polychlorinated biphenyls (PCBs; Aroclors)  
Pronamide  
Pyrene  
Safrole

TABLE V  
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS  
Continued

1,2,4,5-Tetrachlorobenzene  
2,3,4,6-Tetrachlorophenol  
o-Toluidine  
Toxaphene  
1,2,4-Trichlorobenzene  
2,4,5-Trichloropheno  
1,2,4,6-Trichlorophenol  
0,0,0-Triethyl phosphorothioate  
sym-Trinitrobenzene

**Chlorophenoxy Herbicides:**

**USEPA Method 8150**

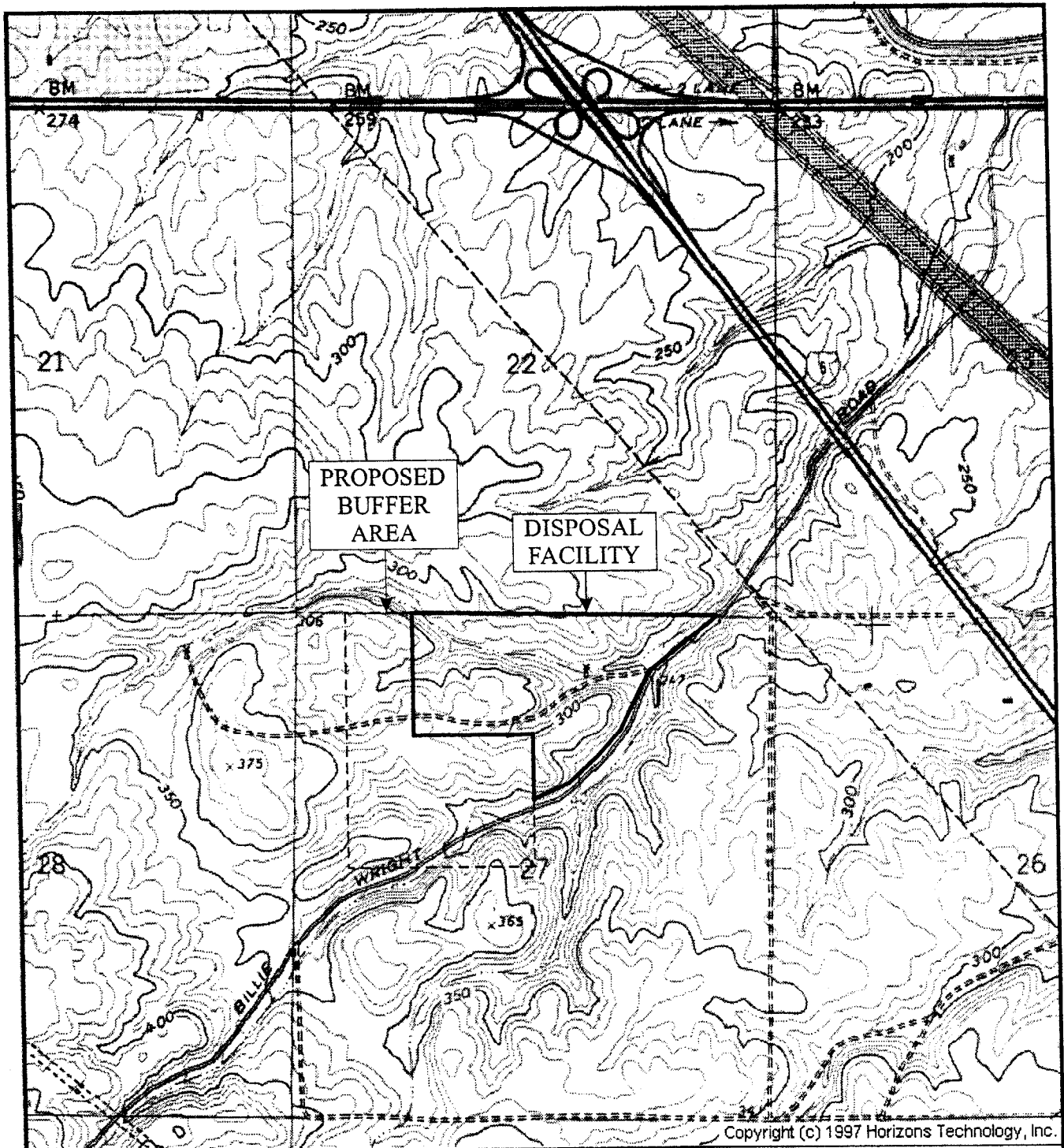
2,4-D (2,4-Dichlorophenoxyacetic acid)  
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)  
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)  
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

**Organophosphorus Compounds:**

**USEPA Method 8141**

0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)  
Dimethoate  
Disulfoton  
Methyl parathion (Parathion methyl)  
Parathion  
Phorate





## ATTACHMENT A

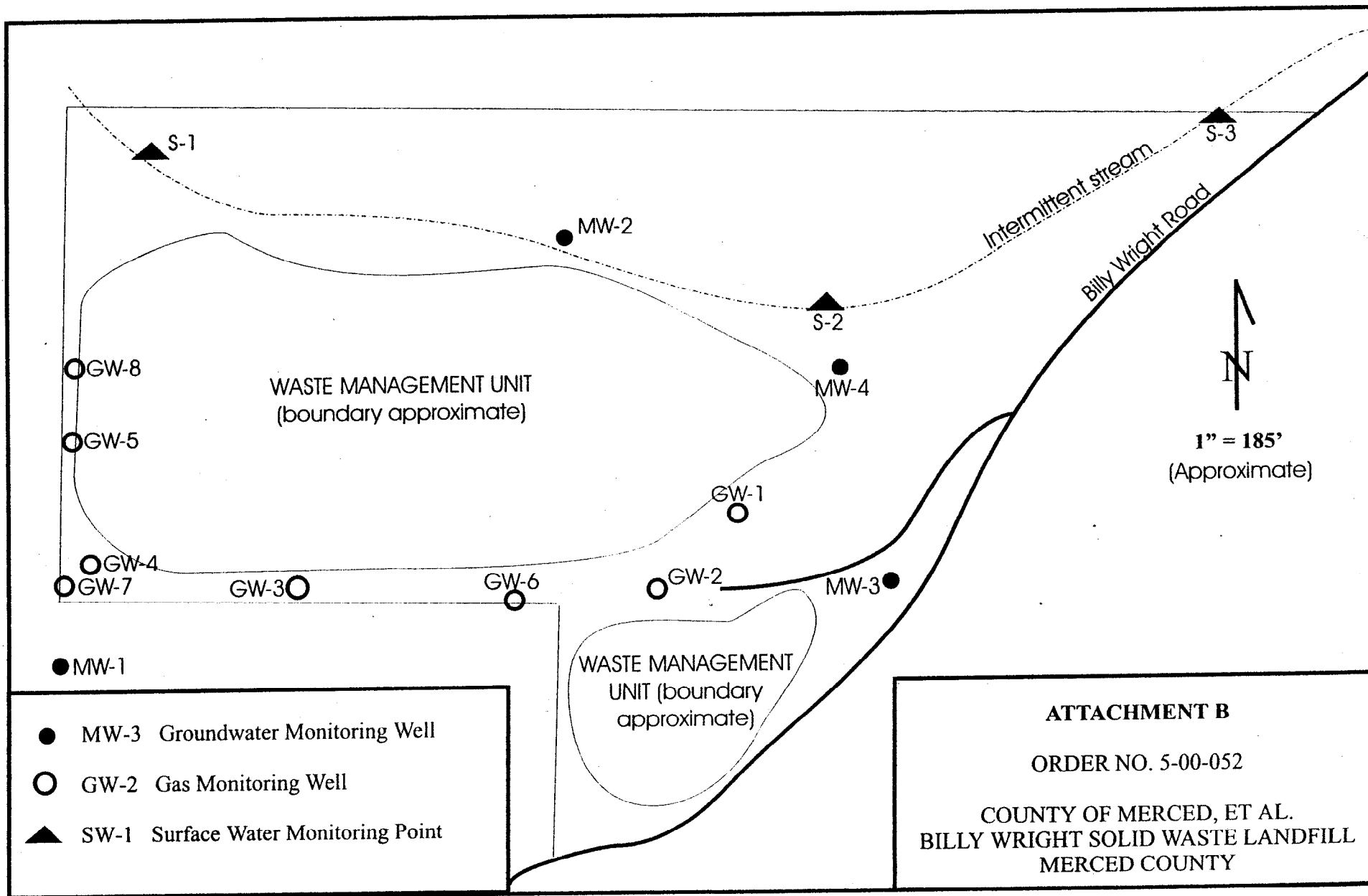
ORDER NO. 5-00-052

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MERCED COUNTY



1" = 1625'

VOLTA, CA. U.S.G.S. 7 1/2 MIN. QUAD



## INFORMATION SHEET

ORDER NO. 5-00-052  
COUNTY OF MERCED, ET AL.  
BILLY WRIGHT SOLID WASTE LANDFILL  
MERCED COUNTY

The Billy Wright Municipal Solid Waste Landfill is jointly owned by the County of Merced and the cities of Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced and operated by the Merced County Public Works Department. The 176.5-acre waste management facility consists of one inactive and one active unlined waste management unit covering 3 and 30 acres, respectively.

The first encountered groundwater is approximately 8 to 44 feet below the native ground surface, and fluctuates as much as three feet. The direction of groundwater flow is toward the northeast, with an average gradient of approximately 0.025 feet per foot. The average groundwater velocity is 5 feet per year. The direction of groundwater flow appears to be a function of secondary permeability, controlled primarily by fractures and the occurrence of thin gypsum beds. Monitoring data indicates that background groundwater quality is extremely poor, with total dissolved solids (TDS) greater than 20,000 mg/l, selenium greater than 2 mg/l, and nitrate (as nitrogen) greater than 50 mg/l. Ground water quality downgradient of the landfill has significantly lower concentrations of TDS and selenium.

Groundwater quality is monitored by four on-site detection wells. In addition, the vadose zone monitoring is performed by collecting samples from five landfill gas monitoring probes installed along the boundaries of the active waste management unit.

Volatile organic compounds (VOCs) have been detected in downgradient monitoring wells below water quality criteria on a sporadic basis. Recent sampling events have not confirmed the presence of these constituents in groundwater samples. In addition, several inorganic constituents of concern have been sporadically detected at concentrations above tolerance limits, including nitrate, chloride, and sulfate. Concentrations of these constituents have been below tolerance limits in recent monitoring sampling events.

The action to update WDRs for this existing facility is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.), in accordance with 14 CCR, Section 15301.

DEE:3/17/2000